

EXPLANATION

Aeromagnetic contours show the residual magnetic intensity of the earth in gammas relative to an arbitrary datum. Contour intervals are 20, 100, 500, 1000, and 2500 gammas, within the specified range. In areas of high gradient, only the larger contour intervals are displayed. Actual contour values are ten times the value of the contour label. Hachures indicate closed areas of lower magnetic intensity. No attempt has been made to remove anomalies due to culture.

20 gamma contour interval  
range -800 to 500 gammas.

100 gamma contour interval  
range -800 to 1500 gammas.

500 gamma contour interval  
range -1500 to 3000 gammas.

1000 gamma contour interval  
range -1000 to 5000 gammas.

2500 gamma contour interval  
range 2500 to 25000 gammas.

INTRODUCTION

This aeromagnetic map was produced by the U.S. Geological Survey as a supplement to the Conterminous United States Mineral Assessment Program (CUSMAP). The U.S. Geological Survey, Branch of Geophysics, flew the aeromagnetic survey in 1985 and 1986. The altitude was radar controlled at 91 meters above ground level (AGL) and the flight lines were north-south with a spacing of about 380 meters. A wing tip mounted, GeoMetrics model G-813 proton procession magnetometer was used with a sensitivity of 0.5 gammas and a cycle time of 0.5 seconds. The average speed of the aircraft was 90 nautical miles per hour (46 meters per second). The geomagnetic reference field removed from the survey was the International Geomagnetic Reference Field (I.G.R.F.), 1985, Julian day 180 (Peddie, 1982).

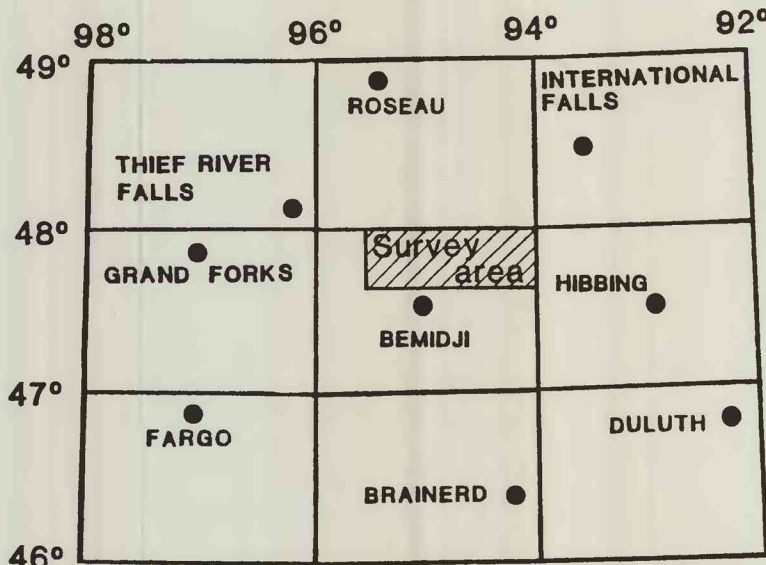
For contouring purposes, the data was gridded with an interval of 0.21336 kilometers using a program based on minimum curvature (Webring, 1981). A low-pass filtering technique (Urquhart, 1988) was applied to reduce errors produced by level changes between flight lines. The map was produced by contouring a version of the grid that was upward continued 200 meters using a program by Hildenbrand (1983). Upward continuation suppresses high frequency componets of the data that could not be contoured appropriately at the presented scale. The resulting map approximates the magnetic field that would be observed on a 291 meter AGL survey.

REFERENCES

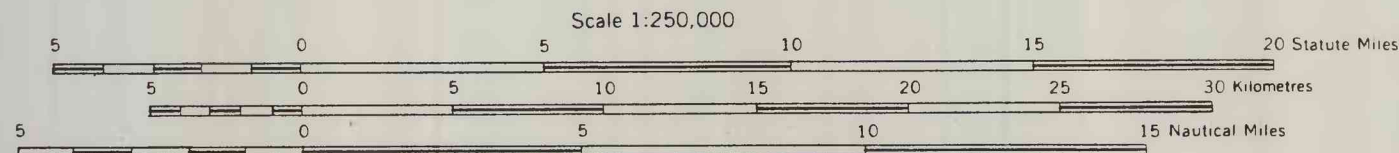
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LOCATION DIAGRAM



CONTOUR VALUES (IN GAMMAS) ARE TEN TIMES THE CONTOUR LABELS  
TRANSVERSE MERCATOR PROJECTION

Aeromagnetic Map of the Northeast Portion of the Bemidji 1° X 2° Quadrangle, Minnesota

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This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards. Any use of trade names is for descriptive purposes only and does not imply endorsement by the USGS.